received at some 76,000 sites worldwide and about 2.5 million people participate in Usenet. About 70 MB of data pass over the Internet each day just in Usenet traffic representing some 29,000 new messages daily.

The main repository of Usenet archives is a machine titled **rtfm.mit.edu** at the Massachusetts Institute of Technology administered by Jonathan Kamens. Kamens has developed a very interesting white pages address directory termed the Usenet Address Server. Software on the system actually scans each Usenet article looking for the FROM header line in the message and adds all new names found to the database.

You can search this database by electronic mail. Send a message to **mail-server@rtfm.mit.edu**. Leave the SUBJECT line blank. In the body of the letter, enter **send usenet-address/name** where **name** contains a portion of the name of the person you are looking for. The program will search the database and send back all lines containing the search pattern you put in **NAME**. You can include more than one search line per message (up to 20 total):

send usenet-address/rickard
send usenet-address/jack
send usenet-address/glastetter

The system will e-mail you a list of ALL entries containing your name search pattern, so if you are looking for a Smith or Johnson, you will probably receive a lengthy message and still have a bit of selection to do. You do not receive any particular directory information such as street mail address, fax number, organization, etc. It is strictly the e-mail addresses picked off of the **FROM** field in the message headers. However, it does provide you information on the date the address was picked up, and we found it remarkably useful actually.

IF WISHES WERE TREES, FAXING WOULD BE FREE

by Kevin M. Savetz

Internet users are tinkerers by nature . The 'net wouldn't be possible without thousands of ingenious hackers around the world, tinkering away to blend a copious hodgepodge of computers, people and appliances. These great minds have brought us such fine artistry as the Internet Toaster, a variety of 'net-linked vending machines, even dial-a-Bible-verse. Many of these tools are useless and many are fun, and occasionally someone tries doing something useful.

In the "something useful" category, a creative group of people have plugged their fax machines into the Internet for "an experiment in remote printing." The experiment is a good hack, allowing Internet users to send faxes via electronic mail. It works simply enough - send electronic mail to a special address, and soon after (if your recipient's fax machine is in a covered area) out comes a freshly-minted fax. This service is free - it doesn't cost the sender a penny to send a fax. The recipient is only out the cost of a sheet or two of fax paper.

The experiment is the brainchild of Carl Malamud (the creator of Internet Talk Radio) and Arlington Hewes. They're doing research on how to integrate special-purpose devices (like facsimile printers) into the fabric of the Internet. The service is currently free, but the creators are investigating ways to help the organizations recoup the cost for sending faxes.

HOW DOES IT WORK?

A variety of companies, institutions and citizens linked to the Internet have joined the experiment by linking a computer and fax modem to the 'net. When an organization joins the remote-fax service, they specify what areas they are willing to send faxes to. In most cases, an organization will allow faxes to be sent to any machine that is a local call from their fax server.

When you send an e-mail fax message, you (naturally) must include the phone number of the recipient's fax machine. A computer looks at the phone number and decides if any participating fax machines cover the area you want to fax to. If so, your message is routed to the appropriate machine for faxation. Otherwise, you will receive electronic mail with the disappointing news that your fax couldn't be delivered.

WHO'S FAXABLE?

Can you send a fax anywhere? Well, no. The experiment only began in July, so only a smattering of participants have enlisted their fax machines in the quest to send outgoing messages from total strangers to other total strangers. As of early November, you can send faxes to all of Australia, Washington, DC, big chunks of Central California, some of Southern California, and parts of Michigan, Massachusetts, and New York. (See sidebar for complete coverage information.)

More locales will be faxable soon, including more parts of the United States, Denmark, Finland, Ireland, Japan and Sweden.

SENDING A FAX

To send a fax over the Internet, compose an e-mail message. The body of the message should contain the contents of your fax message. The TO: line is the most important part of your e-mail, because it must contain the phone number of the recipient's fax machine as well as the recipient's name.

The TO: line should look something like this:
TO:**remote-printer.Arlington_Hewes/Room_403@0.1.5.2.8.6.9.5.1.4.1.tpc.int**

To the left of the **@** symbol, you must include the identity of the recipient. The words "remote-printer" tell the fax server the type of access. (In this case, faxing or remote printing.) Because some mailers have difficulty dealing with addresses that contain spaces, you should be very careful as to what characters you use to identify the recipient. It's safest to use upper and lower case letters, digits, the _ and the **/** character. When the fax cover sheet is generated, the _ will turn into a space and the **/** will become a line break. So, the above address would generate a cover sheet like:

Please deliver this facsimile to:
Arlington Hewes
Room 403

The mess of numbers to the right of the above example identifies the telephone number of the remote fax machine. Exchanges must be specified by country code and phone number. This means you must specify the country code then the phone number of your victim. If you're sending to a machine in the U.S., this just means you need to send a 1, the area code, and the phone number. Now, reverse

the string of numbers (that's right, reverse them. Don't ask me why this step is necessary. What are computers for, after all?) put periods between them, and add the Internet domain "**.tpc.int**". Whew!

So, to send a fax to Mr. Hughes, at **1-415-698-2510**, your e-mail would be TO: **remote-printer.Arlington_Hewes/Room_403@0.1.5.2.8.6.9.5.1.4.1.tpc.int**

You can send a fax to multiple fax machines, or even a combination of faxes and traditional e-mail recipients. After the deed is done, you will receive electronic mail telling you if your fax was successfully sent or not.

FOR MORE INFORMATION

For a copy of the Frequently Asked Questions list on faxing from the 'net, send mail to "**tpc-faq@town.hall.org**" and you will automatically receive the FAQ via e-mail. The FAQ also covers advanced topics like using MIME to send fancy formatted text or graphics, and how to operate a fax server.

Fax sites are being added to the network on a regular basis - for a current list of faxable areas, send e-mail to "**tpc-coverage@town.hall.org**". There is also a mailing list for discussion of the fax service and its implementation.

To join, send a request to **tpc-rp-request@aarnet.edu.au**.

FAXABLE AREA CODES

Australia (+61)
Canberra (+61-62)
Canada and the United States (+1)
+1-313
+1-317
+1-408
+1-415
+1-508
+1-510
+1-615
+1-617
+1-718
+1-800
+1-818
+1-909
Brigham Young University (+1-801)
Manhattan and Staten Island, NY (+1-212)
New York City (misc), NY (+1-917)
Temporary +1-301-981 (+1-301)
University of Wisconsin, Madison (+1-608)
Washington, DC (+1-202)
Denmark (+45)
Copenhagen (+45-3)
Greater Copenhagen (+45-4)
Germany (+49)
Universitaet Dortmund (49-231-755)
New Zealand (+64)
The Netherlands (+31)
Amsterdam (+31-20)
United Kingdom (+44)
University of Oxford (+44-8652)

If you have a question for an administrator that isn't covered on the FAQ or general mailing list, send e-mail to Arlington Hewes at **tpc-admin@town.hall.org**.

*Kevin M. Savetz is a computer journalist based in Arcata, California. He edits the "**Internet Services Frequently Asked Questions and Answers**" list. He can be reached via e-mail at "**savetz@rahul.net**".*

BOOKS ON THE INTERNET

by Jack Rickard

We do occasionally mention published books on communications topics we think our readers might find useful or educational. In recent months, the number of books on the Internet appearing in our mailbox for review might lead us to believe the Internet is being marketed by the pound. And we would be remiss if we did not mention that the vast majority of these titles are uniformly bad - some probably dangerous, but most just useless. It would appear the Internet is the hot topic right now and publishers are throwing crap against the wall in an effort to find out what sticks - and at enormously proud prices at that.

That said, there are a few titles that for various reasons we've found to be quite useful. And we're going to try to "round em up" for you here en masse.

THE INTERNET NAVIGATOR

We would not normally expect a good technical manual to start with a John Keats poem about the discovery of the Pacific Ocean. Paul Gilster's **THE INTERNET NAVIGATOR**, published by John Wiley & Sons, Inc. does. And that wasn't the sole surprise in this book. Rather than try to diagram every resource available on the Internet in some sort of heirarchical form, this book, more than any other, takes the Boardwatch-style "exploration" approach. It is full of interesting places the author has located that offer interesting things for callers.

Hardly off the ground on page three, the book is already noting that you can ftp images of asteroids and planets with photos from the Viking, Voyager, and Magellan space projects from NASA's ames.arc.nasa.gov site. Page four notes you can obtain a map of Finland from garba.uwasa.fi at the University of Vaasa in Finland in GIF format. Page 8 describes how to ftp the full text of U.S. Supreme Court decisions from ftp.cwru.edu. And you still have 462 pages to go.

The book also sports what is probably the most descriptive and useful strategy we've seen in print for getting ON the Internet if you are just starting your journey of exploration. It provides a complete list of FREENET's, describes the list of public access UNIX systems (NIXPUB), and goes into some detail regarding the commercial DELPHI/BIX offering of full Internet access for everyone. It provides you with a reasonably clear description of the basic UNIX commands you will need to pilot the Internet waters without the usual religious arguments and attempts to bring the true gospel of UNIX to the unwashed heathen.

The book does cover the basics of ftp, telnet, and electronic mail. The descriptions of electronic mail programs such as ELM and electronic mail "manners" was a bit cursory we thought. But the chapter Electronic Mail as sa Gateway to the Internet provided some detailed and very useful instructions on retrieving files and accessing services from a basic e-mail account, and did so in very good order. It also provided very good descriptions of how to send elec tronic mail both TO and FROM commercial services such as CompuServe, MCI Mail, GEnie, America Online, and others. It provided excellent descriptions of BITNET as well as Internet mailing lists. We found the information on Marty Hoag's NEWLISTS mailing list (info@vm1.nodak.edu), which serves as a forum for announcing new mailing lists, of significant interest.

Gilster (gilster@rock.concert.net) hits most of the bases with notes on Gopher, WAIS, World Wide Web, Veronica, and other Internet services. The writing style is quite readable and concise. I would rate it most useful as an explorer's handbook for those who have some familiarity with the Internet. Gilster clearly knows the subject and describes it well, but the book tends to be useful for those on the net, and there may be better choices for the novice who wants to get started. It is not particularly technical, but it does tend to describe things you can do better than how to do them. Overall, we found the Internet Navigator's